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MEASUREMENTS OF PAPUAN SKULLS.

BY J. GRAY, B.Sc.

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I HAD recently the opportunity of measuring a number of Papuan skulls in the collection of Mr. W. D. Webster, of Streatham. There is reason to believe that these skulls came from the Purari delta and other places on the shores of the Gulf of Papua, except the last six in Table I, which came from German New Guinea. All the skulls were carved and blackened, except those from German New Guinea.

Table I gives the maximum length and breadth, and the basi-bregmatic height of each of the 124 skulls measured. The breadth and height indices calculated from the measurements are also given in Table I.

Table II gives the frequencies of the lengths, breadths, heights, and of the breadth and height indices. From this table it may be seen that there are two modal lengths, namely, 175 and 178; also two modal breadths, 125 and 130; probably also two modal heights, 132 and 136.¹

All this appears to point to the presence of two racial elements among these skulls, but on the other hand one of the maxima may be due to the presence of a certain number of female skulls among the collection.

The range of variation of the lengths (41 mm.) is considerably greater than the range of the breadths and heights (33 and 32).

The frequency diagrams of the indices also show indications of two maxima. The modal breadth indices may be taken as 71 and 76 and the modal height indices as 76 and 72; the first index in each case being decidedly the most frequent. The range of the indices is very great; from 64 to 83 for the breadth index, and from 67 to 82 for the height index.

The frequency diagram of breadths (p. 264) shows two principal well marked groups near the middle and smaller groups at each end. With a view of ascertaining whether these groups really represent racial elements or only variations of a single race, I have calculated the average length, height and breadth of each group. The results are given in Table III. It is evident that there is no constant correlation between the breadths and the lengths and heights in the four groups. This would also point to the conclusion that there is more than one racial type among the skulls.

¹ The actual maximum points are at 135 and 137, but the average 136 is probably more correct.

TABLE I.

No.	Length.	Breadth.	Height.	$\frac{B.}{L.}$ index.	$\frac{H.}{L.}$ index.	No.	Length.	Breadth.	Height.	$\frac{B.}{L.}$ index.	$\frac{H.}{L.}$ index.
1	180	121	132	67·2	73·3	63	171	125	130	73·2	76·0
2	180	126	127	70·0	70·5	64	175	131	133	75·0	76·1
3	167	118	127	70·7	76·0	65	176	142	126	80·8	71·6
4	176	125	126	71·1	71·6	66	178	125	125	70·2	70·2
5	179	127	132	71·0	73·7	67	189	134	138	70·9	73·0
6	17	130	129	74·7	74·2	68	169	133	135	78·7	79·9
7	157	130	124	82·9	79·1	69	176	128	133	72·7	75·6
8	170	121	131	71·2	77·1	70	175	135	128	77·1	73·2
9	178	124	126	69·7	70·8	71	175	131	132	75·0	75·5
10	168	119	118	70·9	70·3	72	177	127	132	71·8	74·6
11	160	121	124	75·7	77·5	73	168	128	133	76·2	79·2
12	173	123	129	71·1	74·6	74	169	131	130	77·5	76·9
13	189	144	141	76·7	74·6	75	188	129	134	78·7	71·3
14	177	133	132	75·1	74·6	76	175	120	136	68·6	77·8
15	189	126	136	66·7	72·0	77	191	131	130	68·7	63·1
16	165	136	128	82·4	77·6	78	179	134	127	74·9	71·0
17	180	132	135	73·3	75·0	79	186	124	137	66·7	73·7
18	179	130	125	72·6	70·0	80	167	121	125	72·6	74·9
19	167	131	127	78·5	76·0	81	168	129	132	76·8	78·6
20	185	132	132	71·5	71·5	82	168	132	128	78·6	76·2
21	157	121	118	77·1	75·3	83	176	126	136	71·6	77·3
22	187	125	141	66·8	75·5	84	185	130	136	70·3	73·6
23	183	133	129	71·9	70·5	85	195	131	137	67·2	70·3
24	162	131	129	80·9	79·6	86	186	132	133	71·0	71·5
25	182	130	134	71·5	73·6	87	167	122	128	73·1	76·7
26	184	132	130	71·7	70·6	88	181	128	131	70·8	72·4
27	174	129	131	74·2	75·3	89	175	123	126	70·3	72·0
28	161	131	137	81·4	85·0	90	194	130	134	67·0	69·1
29	178	121	127	68·0	71·4	91	162	133	131	82·1	80·9
30	174	125	135	71·9	77·6	92	177	137	135	77·4	76·3
31	186	139	141	74·7	75·8	93	167	134	125	80·2	74·9
32	185	120	135	64·9	73·0	94	169	129	138	71·7	81·7
33	189	131	137	69·3	72·5	95	181	123	137	68·0	75·8
34	171	123	130	72·0	76·0	96	184	129	130	70·2	70·6
35	196	129	130	65·8	66·4	97	185	129	138	69·8	74·6
36	177	128	137	72·4	77·4	98	190	139	137	73·2	72·2
37	174	129	129	74·2	74·2	99	182	143	132	78·5	72·5
38	181	120	132	66·4	73·0	100	175	134	132	76·6	75·5
39	190	125	133	65·8	70·0	101	188	132	137	70·3	72·9
40	180	124	132	69·0	73·3	102	180	125	137	69·5	76·2
41	169	135	136	79·9	80·5	103	180	125	123	69·5	68·3
42	173	125	138	72·3	79·9	104	170	126	127	74·2	74·8
43	177	121	135	68·4	76·3	105	184	143	149	77·7	81·0
44	178	120	131	67·5	73·7	106	180	122	129	67·8	71·7
45	188	136	135	72·4	71·9	107	170	129	135	76·0	79·5
46	173	130	131	75·3	75·8	108	163	129	130	79·2	79·8
47	184	119	126	64·7	68·5	109	181	123	134	68·0	74·1
48	178	125	125	70·2	70·2	110	177	125	133	70·7	75·1
49	177	122	135	69·0	76·3	111	168	130	133	77·4	79·2
50	175	130	131	74·3	75·0	112	171	122	130	71·4	76·0
51	173	123	125	71·1	72·3	113	173	122	126	70·6	72·9
52	197	129	134	65·5	68·0	114	174	123	131	70·7	75·3
53	162	133	131	82·1	80·9	115	176	140	140	79·6	79·6
54	184	126	133	68·5	72·4	116	179	122	133	68·2	74·3
55	183	134	144	73·6	78·7	117	175	112	123	64·0	70·3
56	191	130	135	68·1	70·7	118	178	133	132	74·8	74·2
57	167	117	119	70·1	71·3	119	179	128	137	71·5	76·5
58	183	131	131	71·6	71·6	120	185	135	143	73·0	77·4
59	170	125	134	73·5	78·8	121	178	134	135	75·4	76·0
60	181	137	129	75·8	71·4	122	174	130	133	74·7	76·5
61	160	125	129	78·1	80·7	123	173	120	128	69·4	74·0
62	168	130	129	77·4	76·8	124	178	130	138	73·1	77·6

¹ German New Guinea.

TABLE II.

Lengths.	Frequency.	Breadths.	Frequency.	Heights.	Frequency.	Indices.	Frequency.	
							$\frac{B.}{L.}$	$\frac{H.}{L.}$
157	2	112	1	118	2	{ 63·5 64·5 65·5 66·5 67·5	1	
160	2	117	1	119	1		2	
161	1	118	1	123	2		4	
162	3	119	2	124	2		6	1
163	1	120	5	125	6		8	3
165	1	121	7	126	6	68·5	6	2
167	6	122	6	127	6	69·5	13	8
168	6	123	7	128	5	70·5	15	11
169	4	124	13	129	9	71·5	13	13
170	4	125	3	130	9	72·5	10	9
171	3	126	5	131	10	73·5	5	11
173	6	127	2	132	12	74·5	10	15
174	6	128	15	133	10	75·5	4	18
175	8	129	11	134	6	76·5	8	10
176	5	130	13	135	11	77·5	3	4
177	7	131	0	136	5	78·5	6	7
178	8	132	6	137	10	79·5	4	5
179	5	133	6	138	5	80·5	3	5
180	7	134	6	140	1	81·5	2	1
181	5	135	3	141	3	82·5	1	
182	2	136	2	143	1	83·5		
183	3	137	2	144	1	84·5		1
184	5	139	2		1	85·5		
185	5	140	1					
186	3	142	1					
187	1	143	2					
188	3	144	1					
189	4							
190	2							
191	2							
194	1							
195	1							
196	1							
197	1							

Average length, 177 ; average breadth, 128 ; average height, 132.

TABLE III.

Groups of breadths.	Number of persons.	Lengths.	Heights.	Breadths.
General averages ...	124	177	132	128
Group I (112-123) ...	29	174	129	121
„ II (123-127) ...	23	177	131	125
„ III (127-132) ...	46	178	132	130
„ IV (132-144) ...	26	178	134	136

TABLE IV.

This diagram represents the correlations of the average lengths, heights and breadths of the four groups in Table III.

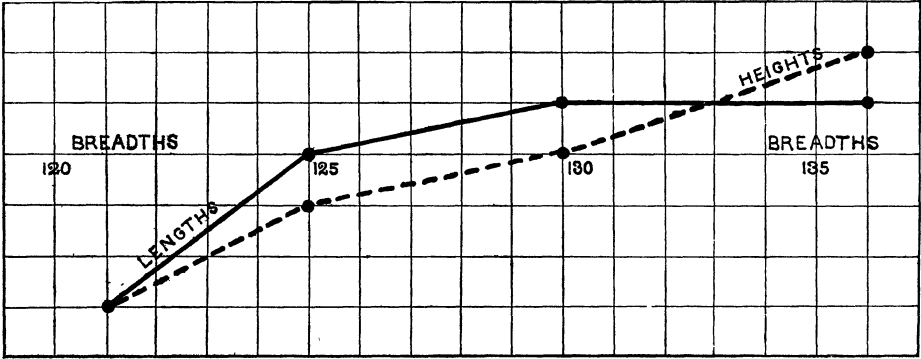


TABLE V.

No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.
1	109.0	22	112.7	43	111.6	64	101.6	85	104.6	106	105.7
2	100.8	23	97.0	44	109.1	65	88.7	86	100.8	107	104.7
3	107.7	24	98.5	45	99.3	66	100.0	87	104.9	108	100.9
4	100.8	25	103.0	46	100.8	67	103.0	88	102.3	109	108.9
5	104.0	26	98.5	47	105.8	68	101.5	89	102.5	110	106.4
6	99.3	27	101.7	48	100.0	69	103.8	90	103.0	111	102.2
7	95.5	28	104.6	49	110.7	70	74.8	91	98.5	112	106.5
8	108.2	29	105.0	50	100.8	71	100.8	92	98.6	113	103.3
9	101.6	30	108.0	51	101.7	72	104.0	93	93.3	114	106.4
10	99.2	31	101.5	52	103.9	73	103.8	94	107.0	115	100.0
11	102.5	32	112.5	53	98.5	74	99.2	95	111.4	116	108.9
12	104.9	33	104.6	54	105.5	75	103.9	96	100.9	117	109.9
13	98.0	34	105.6	55	107.5	76	113.3	97	107.0	118	99.2
14	99.2	35	100.9	56	103.8	77	99.2	98	98.5	119	107.0
15	107.9	36	107.0	57	101.8	78	94.8	99	91.5	120	106.0
16	106.2	37	100.0	58	100.0	79	110.4	100	98.5	121	100.7
17	102.2	38	110.0	59	107.2	80	103.3	101	103.8	122	102.2
18	96.2	39	106.4	60	106.3	81	102.4	102	109.6	123	106.6
19	103.2	40	106.5	61	103.2	82	97.0	103	98.5	124	106.2
20	100.0	41	100.8	62	99.2	83	107.9	104	100.8		
21	97.5	42	110.3	63	104.0	84	104.6	105	104.2		